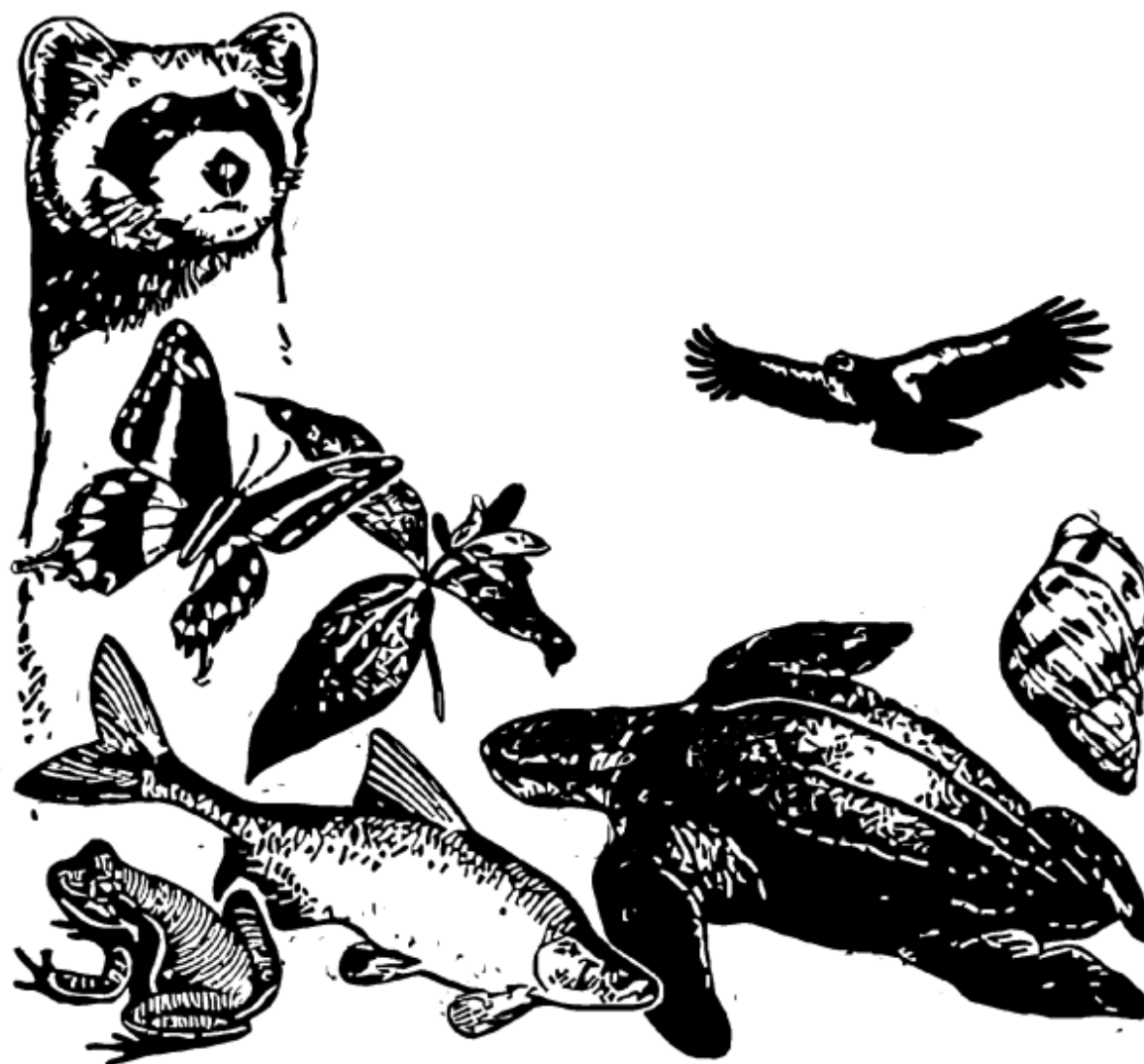


Everglade Snail Kite

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Snail Kite Survey Protocol

A survey is necessary when the project site is within the snail kite consultation area and suitable habitat is present. The following criteria can be used to judge the adequacy of the habitat for snail kites.

1. Appropriate foraging habitat present
[paspalidum (*Paspalidium geminatum*), spikerushes (*Eleocharis* spp.), panicum (*Panicum* spp.), or beakrushes (*Rhynchospora* spp.)].
2. Nesting or perching substrate present
[willows (*Salix caroliniana*), melaleuca (*Melaleuca quinquenervia*), or pond cypress (*Taxodium ascendens*)]
[sawgrass (*Cladium jamaicense*), cattail (*Typha* spp.), giant bulrush (*Scirpus validus*), or reed (*Phragmites australis*)].
3. Appropriate water depth (0.2-1.3 m deep) under nesting substrate.
4. Nesting substrate an adequate distance (>150 m) from upland.
5. Proximity of nearest wading bird colony.

If suitable habitat is present or snail kites are reported on site the following survey procedures should be used to document their occurrence. To maximize the chances of finding snail kites the survey should be conducted in January to May during the breeding season.

Record conditions in the suitable habitat including emergent vegetation types, nesting and perching substrate types, water depth in potential nesting areas, and distance from uplands.

A visual survey of suitable habitat should be made for birds and nests. A boat may be needed for the survey as the best nesting habitat may be a considerable distance (>150 m) from uplands. Check small trees, such as, willow, melaleuca, and pond cypress along the open water edge for nests or perching birds. If snail kites are observed, then nests can be located through the bird's behavior. When flushed from a nest the adult tends to circle upward, whereas non-nesting birds that are flushed fly more horizontally away from the disturbance (Bennetts et al. 1988). Nests also can be found by following kites carrying sticks, adults carrying apple snails, aerial courtship displays, vocalizations of adults or begging calls of the young, and through a thorough search of areas where adults are repeatedly observed (Bennetts et al. 1988).

When water levels are low snail kites may be forced to nest in vegetation along levees and roads. Check herbaceous vegetation, such as sawgrass, cattail, bulrush, and reed for nests. Record the location of all snail kites observed and describe their behavior. If nests are observed estimate the position of the nest (boat geographic position with direction and distance to nest) without approaching any closer than needed to reduce disturbance to the birds. Plot the location of nests on a map of the site.

Snail kites are highly gregarious and typically roost in colonies when not breeding. Birds found

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on perches that do not return to a nest site are most likely non-breeding. Follow these birds 1.5 to 2 hours before dusk to their roost location (Sykes 1982). Especially look for snail kites around sites with wading birds colonies (*e.g.*, anhingas and herons) nearby. Record the roost location, vegetation types, and number of snail kites at the site.

Where project activities, such as dredging, brush clearing, and herbicide treatment, may come within 130 m (425 ft) of nest or roost sites the area can be marked with PVC poles or poles with white balls on the top if aerial observation is necessary. The geographic coordinates of the markers should be obtained and marked on a site map. Project personnel should be informed to avoid marked areas and given a map indicating protective areas.

Because of the secretive nature of the snail kite and the need to differentiate breeding and non-breeding behavior surveys require specialized training. A qualified avian biologist/ecologist should be used to be to obtain acceptable results.

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Snail Kite Monitoring Protocol

Every effort should be undertaken to avoid adverse effects to any snail kite observed during project activities. If it appears that these activities will alter breeding, feeding, or roosting behavior of snail kites, the activity must not be carried out until the proper action can be determined.

A pre-project activity survey should be conducted to learn foraging, feeding, and roosting patterns of the snail kite group on site. Document the location of all snail kites and describe their behavior.

Once project activities begin a monitor should be on site if activities are within 130 m (425 ft) of snail kite nests or roosts. Project activities should cease if the snail kites are disturbed. If disturbance is expected then an incidental take permit is needed.

At the end of project activities in the snail kite areas a monitoring report should be sent to the South Florida Ecological Services Office within 60 days.

A snail kite education plan can be used to help reduce the effects of a project on snail kites. All project associated personnel should be briefed as to the nature of snail kites and the potential impacts of the project on them. The plan should include:

1. a description of the snail kite, its habits, and protection under Federal law;
2. instruction not to injure, harm, harass, or kill this species or possess any part thereof (*e.g.*, feathers, eggs, and nest);
3. instructions to cease project activities if a snail kite nest or roost is found with 130 m (425 ft) of project activities; and
4. telephone numbers of pertinent agencies to contact if snail kite is found dead.

If an on-site monitor is needed they should have the following qualifications:

a qualified avian biologist/ecologist;

demonstrate their familiarity with south Florida raptor species and have prior south Florida raptor survey and monitoring observational experience; and

have authority to cease all project related activities that may appear to alter breeding, feeding, or roosting behavior of snail kites.

Activities can resume if the birds leave the area or when the nestlings have fledged.

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Literature Cited

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